Customer satisfaction and sales performance in wine tasting rooms

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Abstract

Purpose – The purpose of this paper is to study the linkages between customer satisfaction (CS) and sales performance among wineries in New York State's Finger Lakes region.

Design/methodology/approach – A survey instrument was used to collect data from visitors to winery tasting rooms in the Finger Lakes. Responses from 457 visitors were collected from nine wineries during the period June 2010 through November 2010. The authors used a factor analysis to identify the primary drivers of CS. Then, the authors modeled the relationship between these drivers and overall CS and assessed the impact of CS on sales, purchase and repurchase intentions.

Findings – The authors found five principal drivers of CS: ambience, tasting protocol, service, retail execution, and tasting experience. Of these, ambience and service exerted the most influence on overall CS. Furthermore, as expected, CS significantly influences purchase intentions, the amount of dollars spent and quantity purchased.

Practical implications – The results provide valuable information to winery tasting room managers/owners on measures they can use to improve sales performance. Identifying attributes of the tasting room that generate a positive customer reaction can help winery managers/owners make profit-maximizing decisions.

Originality/value – While the links between CS and sales performance have been established in other product sectors, few studies have focused on a comprehensive assessment of CS and sales performance in wine tasting rooms.

Keywords Surveys, Customer satisfaction, Regression, Finger Lakes region, Logit/probit/tobit, Wine tasting rooms

Paper type Research paper

Introduction

Customer satisfaction (CS) is critical to a firm's success. There is agreement among wine marketers and managers that tasting room experiences have a strong influence on CS, repurchase intentions, tasting room sales and, ultimately, on winery profits. The tasting room experience is influenced not only by consumers' perceptions of wine quality and prices, also by the tasting room atmosphere, the characteristics and attitudes of wine pourers, ancillary services provided by the winery and the attitudes of employees in the tasting room, among others. Therefore, identifying the tasting room attributes that drive CS can help winery owners and managers make profit-maximizing decisions about their tasting rooms, from tasting room design to employee selection/training to product selection.

A recent study by Stonebridge Research (2010) illustrates the importance of tasting room sales among New York State (NYS) wine makers. On average, nearly 60 percent of New York wine sales are realized during tasting room visits. The importance of tasting room sales illustrates the wine sector's strong ties to tourism and the strategic role that tasting rooms play in the overall business and marketing strategies of NYS wineries. Tasting rooms are, in many cases, the first point of contact between the winery and a customer who, ideally, would become a dependable repeat customer.

Many NYS winery operators have made substantial investments in their tasting rooms and virtually all of them rely on winery visitors for an important portion of their total sales. In addition, a positive experience in the tasting room can contribute to a stronger customer relationship with buyers that live far from the winery, including more out-of-state customers as restrictions to interstate direct sales of NYS wine are relaxed. To shed more light on these issues, we collaborated with nine wineries in the Finger Lakes region on a survey and subsequent analysis to identify the drivers of CS, measure the impact of these drivers on overall satisfaction of tasting room visitors, and measure linkages between CS and tasting room sales performance.

Why is CS important?

Satisfying customers is critical to a firm's success. Firms that cannot satisfy their customers are likely to lose market share to rivals who offer better products and service at competitive prices. Fornell (2001) posits that satisfied customers could be the most consequential of all economic assets and that they are proxies for all other economic assets combined. More broadly, customers are a key stakeholder group that affects the legitimacy and long-term survival of the firm. Measuring CS, therefore, provides an indication of how successful a firm is at providing products and/or services to the marketplace (John, 2003). CS is also seen as a key differentiator of wineries and increasingly has become a key element of the business strategy (Gitman and McDaniel, 2004).

Extensive research in marketing shows that maintaining a satisfied customer base makes economic sense. According to Kotler and Keller (2006), the average US firm dealing in consumer packaged goods loses 10 percent of its customers each year; acquiring new customers can cost five times more than satisfying and retaining current customers. Conversely, considerable effort is often required to induce satisfied customers to switch to an alternate supplier. Both CS and customer retention have a great impact on a firm's economic success. The authors posit that a 5 percent point reduction in the customer defection rate can increase profits by 25-80 percent, depending on the industry. Moreover, the customer profit rate tends to increase over the life of the retained customer due to increased purchases, referrals, price premiums and reduced operating costs for customer service (Kotler and Keller, 2006).

Research has also shown that there is a close relationship between CS and brand loyalty (Torres-Moraga et al., 2008). True loyalty (both behavioral and attitudinal) not only wields a direct and positive influence on profits but also increases word-of-mouth communication (Gremler and Brown, 1999; Arnold and Reynolds, 2000; Griffin, 1995). In addition, highly satisfied customers are less likely to accept competitors' offerings (Gundlach et al., 1995) and their persuasive tactics to attract new customers (Dick and Basu, 1994).

A critical strategic task for the firm is to identify the primary drivers of CS (Ford and Heaton, 1999; Gundersen et al., 1996). Primary drivers are identified by establishing

a direct relationship between how customers rate a destination or a firm's performance and their overall CS and/or intent to return (Torres-Moraga *et al.*, 2008). Decisions leading to satisfied customers can enhance a firm's sales relative to their competitors.

Literature review: CS and wine tasting rooms

Accumulated research on the relationship between CS and sales performance in a variety of industries indicate that satisfied customers provide numerous economic benefits for an organization that retails goods and services. For example, CS has been found to increase revenues (Rust *et al.*, 1995; Gómez *et al.*, 2004), promote product loyalty (Torres-Moraga *et al.*, 2008), and reduce the cost of attracting new customers (Anderson *et al.*, 1997). Reflecting these benefits, previous research shows that having satisfied customers improves the long-term financial performance of firms (Mittal *et al.*, 2005), increases firm profitability (Capon *et al.*, 1990; Aaker and Jacobson, 1994; Anderson *et al.*, 1994), and enhances a firm's market value (Aaker and Jacobson, 1994; Ittner and Larcker, 1998).

Tasting rooms, as discussed above, go to the very fundamentals of wine marketing for smaller wineries, both for established production regions and wineries located in emerging wine regions (Fisher, 2009). The winery tasting room is an important tool to educate visitors and convert them into loyal consumers (Alonso *et al.*, 2008). Thach and Olsen (2004) point out that most wineries are increasingly interested in promoting higher sales in the tasting room to generate both on-site sales and return purchases. As a result, a number of studies have examined tasting room attributes and their influence on perceptions of service quality and, ultimately, wine sales. Dodd and Gustafson (1997) surveyed winery visitors and found that tasting room service, tasting room environment and wine attributes significantly impact consumers' purchasing decisions. Nowak *et al.* (2006) found a positive relationship between CS with the tasting room and post-purchase customer attitudes. The cumulative evidence provided by these studies clearly attests to the importance of satisfied customers to firms wanting increased wine sales.

The wine shopping experience in tasting rooms is influenced by attributes that can extend well beyond the quality and the price of the wines offered (Alonso *et al.*, 2008). In particular, researchers have underscored the relevance of service quality for tasting room performance. Tasting room performance, in turn, is often linked to tourism industry vitality (O'Neill *et al.*, 2002; Charters and O'Neill, 2001; O'Neill and Charters, 2000, 2006; Dodd and Bigotte, 1997; Griffin and Loersch, 2006; Fountain *et al.*, 2008). Fountain *et al.* (2008) showed that tasting room visitors, while interested in the wine, are ultimately looking for a satisfying overall visiting experience. The authors showed that a positive interaction between customers and tasting room staff enhances the tasting room experience, thereby increasing overall CS. O'Neill *et al.* (2002) and O'Neill and Charters (2000), found that, in Australian tasting rooms, attributes associated with service tend to influence perceptions of service quality and purchase decisions more than tangible factors such as the physical characteristics of the tasting room.

In addition to service, research suggests that tasting room appearance and atmosphere also influence visitor perceptions. Griffin and Loersch (2006) demonstrated that attributes related to the interaction with staff and the interior of the tasting room are more important than wine quality in positively influencing the level of visitor satisfaction in emerging wine regions in Australia. Similarly, Charters *et al.* (2009) showed that an aesthetically appealing tasting room influences CS. Namely, the overall

atmosphere of the tasting room reflects on the identity of the winery and the winemaker. Dodd and Bigotte (1997) underscored the importance of winery visitor demographics, age cohorts in particular, finding that older visitors tend to focus more on wine quality, while younger visitors give relatively more attention to service quality.

The literature has also addressed the impact of visitors' perceptions on their decisions to purchase and re-purchase wine. Charters and O'Neill (2001) showed that, among Australian visitors, service related-factors are more important to the purchase and re-purchase decisions than wine quality. Dodd and Gustafson (1997) found that negative visitor perceptions of the tasting room affect the amount each person spent on wine and on other products, e.g. souvenir items, at Texas wineries. Similarly, O'Neill and Charters (2000) suggested that customers' perception of service quality is an antecedent of their purchasing decisions. Fountain *et al.* (2008) found that, in the context of Australian wineries, the bond that the visitor feels with the winery continued after he/she left the tasting room. Moreover, Nowak and Newton (2006) showed that positive emotions experienced in the tasting room are the first step to create a long-term relationship between the customer and the winery. Increased attachment impacts willingness to pay a price premium and nurtures brand loyalty. These results suggest that the tasting room experience may extend beyond the visit, thereby influencing the likelihood future visits and the probability of wine re-purchases (Gill *et al.*, 2007).

The importance of CS with the tasting room experience and its value to winery performance is well established in the literature. However, additional research on the drivers of CS and the impacts on sales performance that discriminates among regions and type of visitors to the tasting rooms in needed (Charters and O'Neill, 2001; Charters *et al.*, 2009). In this study, we comprehensively examine the drivers of satisfaction in wine tasting rooms focusing on the Finger Lakes in NYS; and, in turn, measure the extent to which improvements in CS positively influence purchase and re-purchase decisions. Thus, we complement existing literature by examining the CS-sales performance links in the Finger Lakes wine region in a comprehensive way by examining additional tasting room characteristics such as retail operations and protocols followed for the wine tastings. Addressing the links between drivers of CS and sales performance in an integrated manner can help winery managers prioritize actions to enhance winery revenues.

Conceptual framework and data

Understanding the links between CS and sales performance requires a conceptual framework that describes the antecedents and the consequences of CS. As a point of departure, we depict a CS-performance chain (Figure 1) that follows a broader conceptual framework proposed by Heskett *et al.* (1994). This framework has been employed previously in empirical marketing research (Anderson and Mittal, 2000; Gómez *et al.*, 2004). First, it is possible to identify various specific and measurable attributes expected to influence CS. These specific attributes, in turn, give shape to a smaller set of satisfaction drivers (or factors) that lead to overall CS. It follows that improving upon these satisfaction factors increases overall CS. Next, increased overall CS should lead to more robust purchase intentions, higher sales, and increased customer retention.

To identify the CS attributes, we employ elements of the Servicescape model developed by Bitner (1992) and applied by Harris and Ezeh (2008), along with elements

Figure 1.
The conceptual model
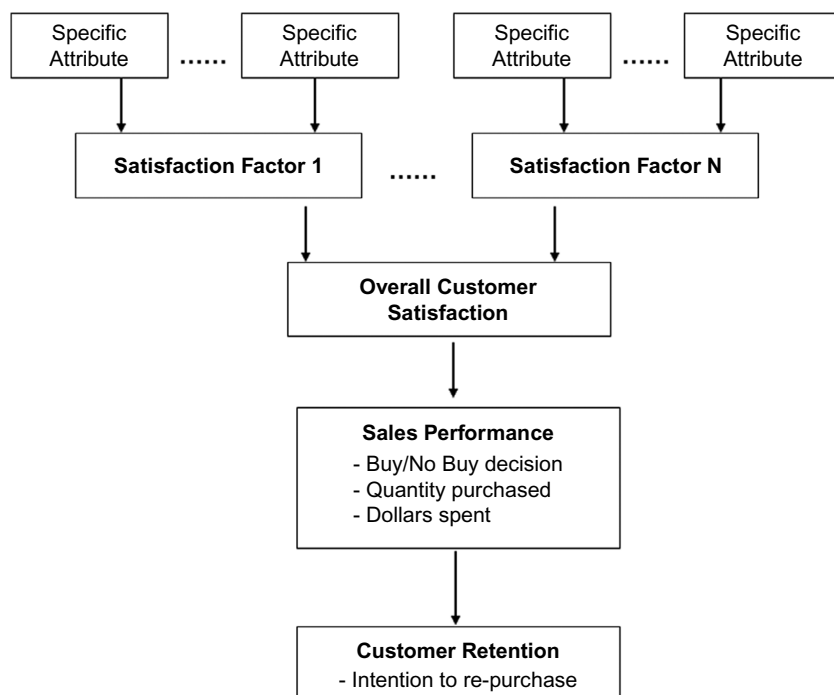
Source: From Gómez *et al*. (2004); author's creating based on Heskett *et al*. (1994)

of retail execution Gupta *et al.* (2007). Initially, we identified 54 tasting room attributes that reflect testing room design and ambience, staffing characteristics, tasting room protocol and retail execution. Then, we organized a workshop with the collaborating winery operators. A consensus emerged on 24 attributes deemed to be most important for wineries in the Finger Lakes region. These attributes cover a variety of aspects of the tasting room experience considered in earlier wine studies (O'Neill *et al.*, 2002; Dodd and Gustafson, 1997), including impressions of the winery grounds/view, wine prices, variety of wines tasted, customer perception of wine quality, and friendliness of the tasting room staff. We acknowledge that other studies have employed different attributes, but we wanted to tailor the analysis to attributes of greatest concern to tasting room managers in the Finger Lakes region. The 24 attribute questions and the question capturing each respondent's overall CS score are shown in the Appendix.

Our survey yielded usable data for 457 visitors to tasting rooms at nine wineries in the Finger Lakes between July and October in 2010. Prior to the survey, we met with tasting room managers and discussed the survey protocol to be used when conducting the surveys. The managers were asked to randomly hand out at least five surveys per week after a wine tasting; and respondents were asked to deposit the completed survey in a box or envelope (conveniently located near the exit of the tasting room) before leaving the tasting room.

The survey asked tasting room visitors to rate their perception of the 24 CS attributes related to their tasting room experience (the Appendix). Customers rated the

tasting room performance of these attributes on a scale from 1 (poor) to 5 (excellent). Following earlier research on CS (Gupta *et al.*, 2007; Anderson and Mittal, 2000; Gómez *et al.*, 2004), respondents were also asked to rate their overall satisfaction with the tasting room visit using the same scale (i.e. our measure of overall CS). We followed earlier research on tasting room visitor behavior (Charters and O'Neill, 2001; Dodd and Gustafson, 1997; O'Neill and Charters, 2000) and employed several measures of sales performance, including questions about intention to purchase, the amount spent and number of bottles purchased during the tasting room visit and plans to re-purchase in the future.

In addition, each respondent supplied information on gender, age and education. These demographic factors have been found to influence the behavior and purchase decisions of tasting room visitors (O'Neill and Charters, 2000; O'Neill *et al.*, 2002; Dodd and Gustafson, 1997; Dodd and Bigotte, 1997). Dodd and Bigotte (1997), for example, found that older people tend to spend more money in the tasting room than young people do, conditioned by the level of satisfaction with the tasting room visit. Consequently, we explored whether these demographic variables moderate the influence of overall CS on purchasing decisions.

Methods
The model consists of three parts: a principal components factor analysis to identify factors driving CS; a multiple regression analysis to examine the impact of these factors on overall CS; and multiple regression and discrete choice models to examine the influence of increased levels of overall CS on purchase and re-purchase decisions.

Inclusion of all 24 attributes separately in the model weakens statistical analysis and makes it difficult to identify the impacts of CS on sales. Consequently, following Gómez *et al.* (2004) and O'Neill *et al.* (2002), a principal components factor analysis employing a varimax factor rotation was conducted to reduce the 24 tasting room attribute measures to a smaller set of factors, each of which is a linear combination of a subset of the attributes. We considered all factors with eigenvalues exceeding one. To facilitate interpretation of the factors, we use simple averages of the attributes loading highly on a factor (0.5 or more) instead of factor scores. Thus, the factor analysis yields a vector of CS factors $(F_1, F_2, \ldots, F_M)$, where F_i represents the score of factor i and M is the number of factors. Following Gómez *et al.* (2004) and Gupta *et al.* (2007), the score for each factor is calculated as the arithmetic average of its attributes.

After estimating the factor scores $(F_1, F_2, \ldots, F_M)$, we employed multiple regression analysis to investigate the impact of these CS factors on overall CS. We estimate a regression equation in which overall CS scores are a function of the factor scores:

$$Overall \ \ CS = \alpha_0 + \alpha_1 F_1 + \alpha_2 F_2 + \alpha_3 F_3 + \alpha_4 F_4 + \cdots + \alpha_M F_M + \varepsilon_1. \quad (1)$$

We also examine the impact of overall CS on several sales performance measures, while controlling for other customer characteristics that, according to the literature, may affect purchase decisions. These include age, gender and education level (O'Neill and Charters, 2000; O'Neill *et al.*, 2002; Dodd and Bigotte, 1997). Based on earlier research (Charters and O'Neill, 2001; Dodd and Gustafson, 1997; O'Neill and Charters, 2000), we employ several measures of wine sales performance including purchase decisions and repurchase intentions. We use the following sales performance measures: buy/no buy (*Buy* equals one if the customers bought wine; zero otherwise), the number of bottles purchased in the

visit (*Bottles*), the amount of dollars spent in the visit (*Dollars*), and future purchase intentions (*Come back* equals one if the customers plan to visit again; zero otherwise). Thus, the equations to examine the link between overall CS and sales performance, while controlling for gender, age and education of the respondent (Table II), are:

$$Buy = \beta_{00} + \beta_{01}\, Overall\ CS + \beta_{02}\, Gender + \beta_{03}\, Age + \beta_{04}\, Education + \varepsilon_2 \quad (2)$$

$$Bottles = \beta_{10} + \beta_{11}\, Overall\ CS + \beta_{12}\, Gender + \beta_{13}\, Age + \beta_{14}\, Education + \varepsilon_3 \quad (3)$$

$$Dollars = \beta_{20} + \beta_{21}\, Overall\ CS + \beta_{22}\, Gender + \beta_{23}\, Age + \beta_{24}\, Education + \varepsilon_4 \quad (4)$$

$$Come\ back = \beta_{30} + \beta_{31}\, Overall\ CS + \beta_{32}\, Gender + \beta_{33}\, Age + \beta_{34}\, Education + \varepsilon_5. \quad (5)$$

We use ordinary least squares (OLS) to estimate equations (3) and (4) because each dependent variable is continuous. Logit models were used to estimate equations (2) and (5) because the dependent variables are dichotomous.

Finally, we examine the mediating effect of overall CS on the relationship between CS factors and our measures of sales performance with the following regressions:

$$Performance\ Measure_i = \theta_0 + \theta_1\, Factor_j + \theta_2\, Gender + \theta_3\, Age + \theta_4\, Education + \varepsilon_6, \quad (6)$$

$$Performance\ Measure_i = \gamma_0 + \gamma_1\, Factor_j + \gamma_2\, Overall\ CS + \gamma_3\, Gender + \gamma_4\, Age + \gamma_5\, Education + \varepsilon_7, \quad (7)$$

where *Performance Measure* represents the dependent variables describing purchasing decisions (*Buy*, *Bottles* or *Dollars*); and *Factor* represents each of the CS factors. A comparison of the estimated parameters θ_1 and γ_1 provides a test of the mediating effects of overall CS on each CS factor.

Factor analysis results and descriptive statistics
The results of the principal components factor analysis are shown in Table I. The Kaiser-Meyer-Olkin (KMO) measure equals 0.87 and suggests that the factor analysis is appropriate. Each factor is a combination of the survey questions related to that factor. For example, the first factor, "Ambience", relates to the overall atmosphere of the tasting room facilities. Ambience includes opinions on tasting room cleanliness, winery grounds/view, and general atmosphere, lighting and sounds in the tasting room. The second factor, "Service", references interactions between tasting room personnel and customers: friendliness and knowledge of the pourer, appearance/presentation of the pourer and helpfulness of tasting room staff. The third factor is "Tasting Protocol" and reflects the variety and number of wines offered for tasting, the cash charge levied for the tasting, and the amount of wine served. The fourth factor, "Tasting Experience", focuses more directly on the customer and includes flexibility in the choice of wines tasted, space provided at the tasting counter, and waiting time. Finally, the fifth factor is "Retail Execution" and includes such attributes as availability of wine for purchasing, merchandising, and customer perceptions about quality and price of the wines offered. The α coefficients are all greater than 0.75, indicating that the attributes in a given factor are measuring the same construct.

Factor	Attributes in factor	Factor loadings
Ambience	Impression of the grounds/view	0.77
Eigenvalue = 8.10	Ambience of the tasting room	0.76
Coefficient α = 0.83	Sounds in the tasting room	0.76
	Lighting in the tasting room	0.69
	Overall tasting room cleanliness	0.60
Service	Friendliness of pourer	0.84
Eigenvalue = 1.31	Wine knowledge of pourer	0.79
Coefficient α = 0.80	Appearance/presentation of pourer	0.72
	Helpfulness of tasting room staff	0.56
Tasting protocol	Variety of the wines tasted	0.87
Eigenvalue = 1.56	Amount of wine served	0.86
Coefficient α = 0.85	Number of wines tasted	0.85
	Cost of the tasting	0.82
Tasting experience	Waiting rime for tasting to start	0.84
Eigenvalue = 1.23	Flexibility in the choice of wines tasted	0.82
Coefficient α = 0.76	Space (elbow room) available for tasting	0.71
	Waiting time between samples	0.51
Retail execution	Discounts available for wine purchase	0.72
Eigenvalue = 2.91	Quality of wines	0.70
Coefficient α = 0.83	Availability of non-wine gift items	0.70
	Wine prices	0.55
	Availability of wine for purchasing	0.53
	Presentation/display of wine for purchasing	0.51
	Ease of finding the winery due to signage	0.51

Table I.
Defining CS factors

Note: Kaiser-Meyer-Olkin measure = 0.87

In Table II, we show descriptive statistics of the CS factors, sales performance measures, and respondent demographics employed for estimation in equations (1)-(5). The factor scores are the average of the scores corresponding to the attributes belonging to that specific factor. The average scores for the factors "Service", "Tasting Protocol" and "Tasting Experience" are slightly higher (4.72, 4.71 and 4.70, respectively) than the scores for "Ambience" and "Retail Execution" (4.49 and 4.40, respectively). Overall, the scores of the five factors are relatively high, between 4 (very good) and 5 (excellent). The average overall CS score is also high (4.56) suggesting that visitors to the nine wineries in the sample were mostly satisfied with their tasting room experience. The relatively high CS scores in our sample of nine wineries are consistent to scores in such industries as grocery retailing or restaurants.

Our sales performance measures are intention to purchase, number of bottles purchased, amount of dollars spent, and intention to make a future purchase. In our sample, 79 percent of respondents planned to purchase wine during the visit. The mean number of bottles purchased was 4.56 and the average amount spent was $56.32. Also, 88 percent of respondents planned to purchases wine from the winery in the future. Survey respondents also provided basic demographic information including gender, age, and education level. Females made up 59 percent of all survey respondents. Age of respondents was evenly distributed; about 41 percent of respondents were between 21 and 40 years old and nearly 41 percent of respondent were over 50 years old. Finally, 83 percent of respondents had college degree or graduate training.

Variable	Description	Mean (or % if indicated)	SD
Ambience	Refer to Table I; based on ratings from 1 (poor) to 5 (excellent)	4.49	0.53
Service	Refer to Table I; based on ratings from 1 (poor) to 5 (excellent)	4.72	0.45
Tasting protocol	Refer to Table I; based on ratings from 1 (poor) to 5 (excellent)	4.71	0.44
Tasting experience	Refer to Table I; based on ratings from 1 (poor) to 5 (excellent)	4.70	0.62
Retail execution	Refer to Table I; based on ratings from 1 (poor) to 5 (excellent)	4.40	0.54
Overall CS	Based on ratings from 1 (poor) to 5 (excellent)	4.56	0.60
Intention to	Yes	79%	–
purchase	No	21%	
Bottles purchased	Number of bottles purchased	4.56	7.94
Dollars spent	Amount of money spent	56.32	70.98
Repurchase	Yes	88%	–
intention	No	12%	
Age	"1" 21-30	23%	–
	"2" 31-40	18%	
	"3" 41-50	17%	
	"4" 51-60	25%	
	"5" 61-70	14%	
	"6" 71 and over	2%	
Gender	Female	59%	–
	Male	41%	
Education	"1" High school or less	5%	–
	"2" Some college	12%	
	"3" College degree	45%	
	"4" Graduate degree/training	38%	

Note: $n = 457$

Results

We present results of the parameter estimates from equation (1) in Table III, to examine the links between satisfaction factors and overall CS. The adjusted R^2 for this regression indicates that 23 percent of the variation in overall CS is explained by the scores of the five factors in the model. This magnitude is consistent with results from earlier studies on drivers of satisfaction in grocery retailing (Gómez *et al.*, 2004) and in restaurants (Gupta *et al.*, 2007).

Our results suggest that "Ambience" may be the main driver of overall CS in our sample of wineries. The estimated coefficient for this factor is significant at the 1 percent level. The parameter estimate suggests that a one-point increase (decrease) in "Ambience" score is associated with a 0.25-point increase (decrease) in overall CS. The factors "Service" and "Tasting Protocol" are also important drivers of CS. Our results indicate that a one-point increase (decrease) in both the "Service" and "Tasting Protocol" scores results in a 0.18-point increase (decrease) in overall CS. The estimated coefficient for each of these factors is significant at the 5 percent level. "Retail Execution" is also a driver of overall CS but is less important than the other factors and only significant at the 10 percent level.

Variable (factor)	Mean	SE
Ambience	0.248***	0.069
Service	0.181**	0.078
Tasting protocol	0.184**	0.071
Tasting experience	− 0.006	0.042
Retail execution	0.123*	0.067
R^2	0.231	–
No. of observations	457	–
Note: Statistical significant at: *10, **5 and ***1 percent levels		

Table III.
Regression analysis
of overall CS

Our results suggest that a one-point increase (decrease) in the "Retail Execution" score is associated with a 0.12-point increase (decrease) in overall CS. We did not find evidence that our final factor, "Tasting Experience", influences the level of overall CS.

These results are consistent with previous research showing that tasting room characteristics (reflected in the attribute "Ambience") and positive interactions with tasting room staff (captured in the attribute "Service") are the primary drivers of overall CS (Gill *et al.*, 2007; Fountain *et al.*, 2008; Charters *et al.*, 2009). Not unexpectedly, we also found that attributes related to the tasting room protocol (visitor perception of the number and variety of wines, the amount served, and the costs of the tasting) also influence overall CS. It is interesting to note that the impact of "Retail Execution" (which includes ratings on the perceptions of wine price, quality and assortment) on overall CS is about half of the impact of the factor "Ambience". This may reflect the fact that wine is a complex good for which customer evaluation of the value-quality relationship is difficult to discern, particularly to tasting room visitors.

We present results of the parameter estimates from equations (2) through (5) in Table IV to examine the influence of overall CS on several sales performance measures.

Variable	Sales performance measures			
	Decision to purchase (SE)	Dollars spent (SE)	Number of bottles bought (SE)	Future purchase (SE)
Overall CS	0.646***	10.339**	0.848**	− 0.074
	(0.229)	(4.498)	(0.307)	(0.281)
Gender	0.241	− 8.504	0.046	− 0.690*
	(0.291)	(7.830)	(0.595)	(0.354)
Age	0.028	8.051***	0.833***	− 0.221*
	(0.100)	(2.619)	(0.199)	(0.123)
Education level	− 0.002	5.841	− 0.009	0.460*
	(0.170)	(4.645)	(0.348)	(0.242)
R^2	–	0.18	0.24	–
Log likelihood	− 149.5	–	–	− 48.1
Prob. > χ^2	0.003	–	–	<0.001
No. of observations	457			
Notes: Statistical significant at: *10, **5 and ***1 percent levels; SE denotes standard errors				

Table IV.
Impact of CS on
alternative measures of
sales performance

The adjusted R^2 corresponding to the OLS estimates in equations (3) and (4) indicates that our model explains 18 and 24 percent of the variability in quantity purchased and dollars spent during the visit, respectively. The p-values of the LR tests of the logit the models in equations (2) and (5) are significant.

Our results also suggest that a higher level of overall CS increases the likelihood of purchase. Specifically, if overall CS increases by one point relative to the mean, the odds ratio shows that intention to purchase will almost double. The odds ratio of overall CS is 1.9 and is significant at the 1 percent level. Our results suggest that a one-point increase in overall CS causes consumers to spend $10.40 more on their tasting room purchase, and to buy about one additional bottle of wine during his/her tasting room visit. These estimates are statistically significant at the 5 percent level. In sharp contrast, the results suggest that overall CS does not affect future plans to purchase.

Considering the influence of demographic variables, age appears to have a statistically significant positive effect on the number of bottles purchased and on the amount of dollars spent. Our parameter estimates suggest that respondents in a higher age category spent $8.05 more; and purchase, on average, 0.8 more bottles of wine. These results confirm earlier findings in the literature, which show that older customers tend to both spend more and buy more bottles during a given tasting room visit (Charters and O'Neill, 2001; Dodd and Gustafson, 1997; O'Neill and Charters, 2000). When looking at the probability of future purchases, our results suggest that consumers who are more educated, younger, and female are more likely to purchase wine in the future.

We present results of examining the mediating effects of overall CS in the relationship between satisfaction factors and purchase decisions in Table V. The parameter estimates of θ_1 and γ_1 in equations (6) and (7) represent the coefficients of a given satisfaction factor with and without overall CS in the regression model, respectively. Our results suggest that overall CS partially mediates the influence of the factors "Ambience" and "Service" on sales. That is, the magnitude of the impact of these two factors (and their statistical significance) on all three purchasing decision measures decreases when overall CS is included in the regression. These results are consistent with earlier research suggesting that the level of service provided by tasting room staff and the physical characteristics of the tasting room are important determinants of visitor perceptions associated with the tasting room experience (O'Neill *et al.*, 2002; Charters and O'Neill, 2001; O'Neill and Charters, 2000; Dodd and Bigotte, 1997; Griffin and Loersch, 2006) and with the Servicescape model (Bitner, 1992). Our results also suggest that overall CS has a modest significant mediating effect on the impact of "Retail Execution" on sales. This is also consistent with the Servicescape model (Harris and Ezeh, 2008; Bitner, 1992). Finally, our analysis suggest that the factors "Tasting Protocol" and "Tasting Experience" do not influence sales performance, except for the positive association between "Tasting Protocol" and the visitor's decision to purchase. Thus, overall CS may not mediate the relationship between these two factors and wine sales.

In Table VI we employ the parameter estimates from Table IV to simulate the impact of moving a visitor from the "Satisfied" (score = 4) to "Highly Satisfied" (score = 5) category on our measures of sales performance. The simulation suggests that converting a customer from being "Satisfied" to being "Highly Satisfied" increases his/her probability of a wine purchase from 70 to 93 percent; this customer is likely to buy one additional bottle of wine (5.5 versus 4.5) and spend an additional $10 ($72 versus $62)

Satisfaction factor	Parameter estimates[a]	Decision to purchase	Dollars spent	Number of bottles bought
Ambience	θ_1	0.792***	16.460**	0.759*
		(0.245)[b]	(7.154)	(0.438)
	γ_1	0.508*	13.658*	0.297
		(0.276)	(7.991)	(0.609)
Service	θ_1	0.903***	26.992***	1.413**
		(0.283)	(8.701)	(0.673)
	γ_1	0.483*	22.546**	0.808
		(0.250)	(9.798)	(0.755)
Tasting protocol	θ_1	1.150***	10.036	0.171
		(0.278)	(9.001)	(0.670)
	γ_1	0.988***	4.214	−0.510
		(0.297)	(9.900)	(0.725)
Tasting experience	θ_1	0.108	4.590	0.333
		(0.232)	(6.346)	(0.504)
	γ_1	0.173	4.024	0.283
		(0.239)	(6.334)	(0.507)
Retail execution	θ_1	1.323***	22.252***	1.581***
		(0.267)	(7.190)	(0.554)
	γ_1	1.180***	19.836**	1.274**
		(0.291)	(7.812)	(0.611)

Table V.
Mediating effects of overall CS on the impacts of satisfaction factor on sales performance

Notes: Statistical significant at: *10, **5 and ***1 percent levels; SE denotes standard errors; [a]θ_1 (γ_1) is the coefficient of the factor when overall CS is excluded from (included in) the regression model; [b]standard deviations are in parenthesis

Table VI.
Impact of converting a visitor from "satisfied" (score = 4) to "highly satisfied" (score = 5) on various measure of sales performance

Performance measure	Sample average	Impact
Probability of purchase (%)	70	93
Average number of bottles purchased	4.5	5.5
Average amount of dollars spent ($)	62	72
Probability of repurchase (%)	88	90

Source: Calculated based on parameter estimates in Table IV and sample averages in Table III

during the visit. Results in Table VI also suggest that increased satisfaction also exerts modest impacts on repurchase intentions, not unexpectedly since probability of repurchase is already at 88 percent.

Conclusion

We examined the links between CS and sales performance in tasting rooms, focusing on the Finger Lakes region in NYS. Our study shows that such factors as ambience, tasting protocol, service and retail execution are significant drivers of overall CS with the tasting room experience. Our study also indicates that the level of customer satisfaction (overall CS) influences the decision to buy, the amount of dollars spent and the number of bottles purchased in a shopping occasion, but does not materially affect the intention to re-purchase in the future. These results complement earlier findings in the literature

showing that tasting room visitors' perceptions influence their purchasing decisions (O'Neill *et al.*, 2002). We also find that overall CS partially mediates the factors ambience, service and, to a lesser extent, retail execution.

Our findings are valuable for winery managers like those situated in the Finger Lakes region who rely on their tasting rooms as a primary source of wine sales. For these wineries, the tasting room is often the first point of contact between the customer and the winery and plays a key role in the overall marketing strategy (Charters *et al.*, 2009). Our study supports and complements earlier research suggesting that focusing on excellent service, paying particular attention to ambience attributes of the tasting room, and excelling in retail operations can positively influence visitor perceptions and thereby improve sales performance (O'Neill and Charters, 2000; O'Neill *et al.*, 2002; Dodd and Bigotte, 1997). The protocol established for wine tastings also influences sales, but only indirectly through its influence on overall CS. Our results also highlight the relevance of demographic information to tasting room managers. In particular, consistent to findings of earlier research (Charters and O'Neill, 2001; Dodd and Gustafson, 1997), tasting room managers should realize that older visitors tend to spend more than younger consumers do in a given visit. Thus, higher spending among older visitors should not be attributed only to outstanding performance of the tasting room in delivering CS.

Our results show that tasting room managers have ample reason to establish CS management programs. However, this study has limitations and more research is needed to more firmly establish CS-sales performance links in wine tasting rooms. First, Heskett *et al.* (1994) framework employed in this study is only one of several options for exploring these relationships. Future research should focus on identifying the advantages and disadvantages of alternate analytical frameworks and the implications for winery operators. A second limitation is that the mean of CS scores in our sample was generally high, making it difficult to assess the impact of negative experiences on visitors' perceptions and purchasing behavior. Future research could also address the sensitivity of satisfaction factors to investment levels in specific underlying components (e.g. investing is improved tasting room designs or establishing programs to improve knowledge and service of tasting room staff). In addition, research could investigate the impact of CS on alternative outcomes such as positive word-of-mouth communication, repeat visits and subscribing to mailing lists, among others. Finally, future empirical investigations should include data on market structure (e.g. number of competing wineries in a given market) to accommodate the effects of competition on CS and other performance measures such as customer loyalty and retention.

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Appendix. Tasting room attributes rated by respondents of the survey (1 – poor, 5 – excellent)

(1) Overall tasting room cleanliness.

(2) Impression of the grounds/view.

(3) Ambience of the tasting room.

(4) Lighting in the tasting room.

60

(5) Sounds in the tasting room.

(6) Friendliness of pourer.

(7) Wine knowledge of pourer.

(8) Appearance/presentation of pourer.

(9) Flexibility in the choice of wines tasted.

(10) Space (elbow room) available for tasting.

(11) Waiting time for tasting to start.

(12) Waiting time between samples.

(13) Availability of wine for purchasing.

(14) Presentation/display of wine for purchasing.

(15) Quality of wine.

(16) Wine prices.

(17) Discounts available for wine purchase.

(18) Helpfulness of tasting room staff.

(19) Availability of non-wine gift items.

(20) Ease of finding the winery due to signage.

(21) Variety of wines tasted.

(22) Amount of wine served.

(23) Cost of tasting.

(24) Number of wines tasted.

(25) Overall satisfaction with the tasting room experience.

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